

# B R E V I O R A

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### A NEW SPECIES OF *ELEUTHERODACTYLUS* FROM GUADELOUPE, WEST INDIES

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The numerous Greater Antillean frogs of the genus *Eleutherodactylus* have, for the most part, been studied as groups and in faunal studies. Cochran (1941) studied the forms occurring on Hispaniola, and Lynn and Grant (1940) studied the Jamaican forms. In a series of papers, Schwartz (1957, 1958a-d, 1959a, b, and 1960) has clarified the status of the forms occurring on Cuba.

The frogs of this genus in the Lesser Antilles are less well understood. Five names have thus far been applied to the frogs occurring there. These are: *E. martinicensis* (Tschudi), *E. johnstonei* Barbour, *E. lentus* (Cope), *E. antillensis* Reinhardt and Lutken, and *E. barbudensis* (Auffenberg). The last form was described as an extinct *Hyla* by Auffenberg (1958) but I have recently shown (Copeia, in press) that it is an *Eleutherodactylus* and is probably not extinct. My studies on the osteology of these frogs and the researches of Albert Schwartz, who is currently revising the Lesser Antillean *Eleutherodactylus*, show that in reality there are numerous forms of this genus occurring on the Lesser Antilles.

James Lazell, Jr. and Patrice Barlagne collected two forms at Matouba, north of Basse Terre, La Guadeloupe, which they could distinguish by voice and habit of calling. On external features, however, they are nearly identical. But from Lazell's field notes and discussions with him it appeared that two species were involved. Inasmuch as I had had good fortune in separating some of the other *Eleutherodactylus* on neighboring islands by the structure of their pelvic osteology, specimens of these

forms were macerated, and strong differences were found between the ilia of the two forms. These differences are as great or greater than those between any other of the forms of this genus occurring on Antigua, Barbuda, Martinique, St. Kitts or Grenada. In view of this, as well as the minor external differences, and the call difference (which must be an important isolating mechanism), it is evident that there are two species occurring in the vicinity of Matouba.

One of these, the larger, also occurs on Martinique and is very probably *E. martinicensis*. The second species is apparently cryptic (although not sibling). It is here named for M. Patrice Barlagne, who collected the majority of the specimens and aided Lazell in collecting on the Souffriere-Sans Toucher massif of La Guadeloupe.

ELEUTHERODACTYLUS BARLAGNEI sp. nov.

*Holotype*. Adult female, MCZ 35334, collected by Patrice Barlagne and James Lazell, Jr., at Matouba, La Guadeloupe, ca. 700 meters elevation, on 17 August, 1961.

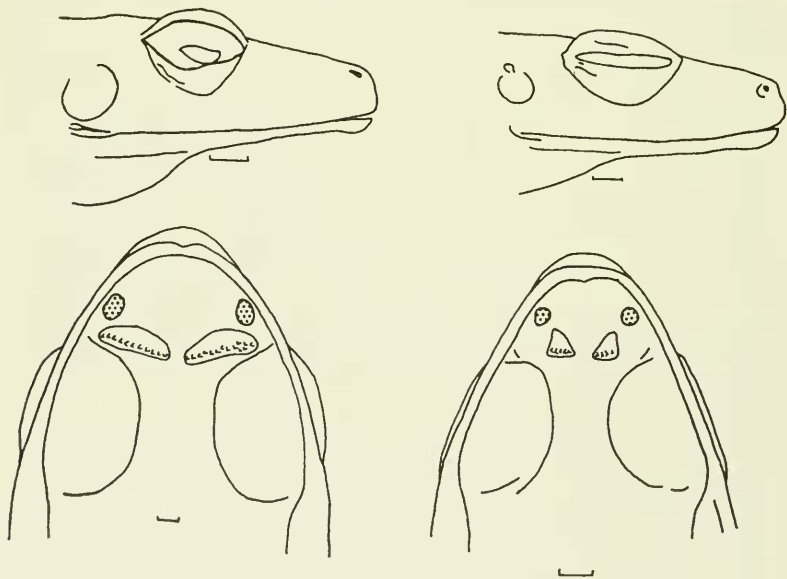


FIGURE 1. (Left) *Eleutherodactylus martinicensis* MCZ 35322; top, side of head; bottom, roof of mouth. (Right) *Eleutherodactylus barlagnei* sp. nov., holotype MCZ 35334; top, side of head, bottom, roof of mouth.

*Paratypes.* MCZ 35330-33 (4), same data as for holotype. MCZ 35331 is a skeleton.

*Diagnosis.* An *Eleutherodactylus* apparently related to *E. martinicensis* and separable from that species and all other Lesser Antillean species of the genus by the following combination of characters: head narrow, not wider than body; tympanum small, hidden dorsally, a small tubercle in the area of the hidden tympanic membrane; tympanum separated from commissure of jaws by three-quarters to more than the horizontal diameter of the tympanum; choanae completely visible from below; vomerine tooth bosses triangular in outline, within the borders of and posterior to the choanae; the voice assumed to be that of the new form (since the species could not be separated on other bases in the field) is described by Lazell as "Teecn."

*Description of holotype.* Adult female (see Fig. 1): head very slightly broader than long; head not broader than body; eyes small, width of eyelid less than interorbital distance; canthus rostralis distinct, not sharp; loreal region slightly concave, sloping sharply to lip; nostrils closer to tip of snout than to eye, area around them swollen; length of eye greater than distance from eye to nostril; tympanum small, about one-third diameter of eye, upper portions hidden, not distinguishable; tubercle present in area where upper rim of tympanum should be; distance from tympanum to commissure of mouth slightly greater than horizontal length of tympanum; anterior edge of tympanum from eye about one and one-half times horizontal width of tympanum; no supra- or post-tympanic fold present.

Tongue oval, free for about one-half its length; no vocal sac or slits; choanae not concealed by rim of upper jaws, small, round, slightly smaller than area of a vomerine tooth boss; vomerine tooth bosses between and posterior to choanae, triangular in outline, separated by a distance about equal to width of a single boss.

No axillary membrane; no tubercles or ridges on arm; palmar tubercles small; supernumerary tubercles on palms very faint or lacking; subarticular tubercles large, rounded, simple; lateral fringe present on fingers; no webbing between fingers; order of finger length, shortest to longest, 1, 2, 4, 3; circular disks on fingers, somewhat like pads of hylids in lateral view, notch present; no tarsal fold or tubercles; inner metatarsal tubercle small, elongate; outer metatarsal tubercle faint, but large; no supernumerary tubercles on soles; subarticular tubercles large, round,

simple; lateral fringes on toes; pads on toes like those on fingers, but smaller; faint webbing on toes except for web between toes 3 and 4 which is clearly visible for about one-half of toe 3; legs short, heels do not overlap when flexed legs are held at right angles to body; heel of adpressed hind limb extends to mid-eye.

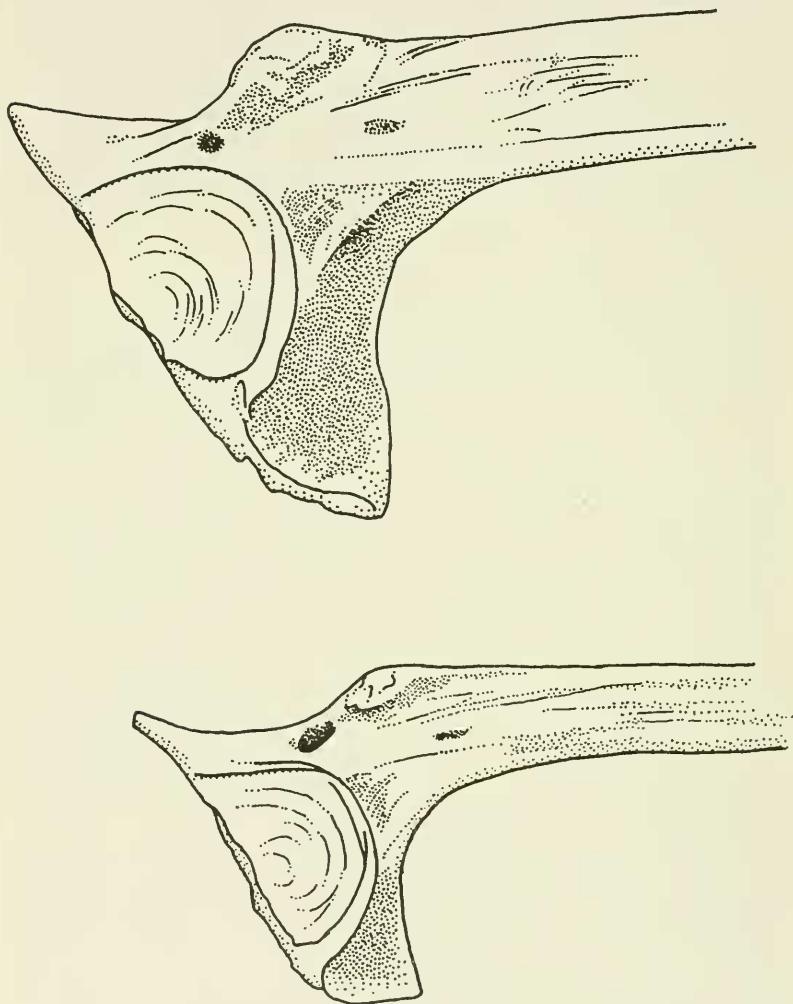


FIGURE 2. (Top) Right ilium of *Eleutherodactylus martinicensis*, MCZ 35321. (Bottom) Right ilium of *Eleutherodactylus barlagnei* sp. nov., paratype, MCZ 35331.

Skin of dorsum and sides smooth, that of belly and ventral and posterior surface of thighs granular.

*Color in alcohol.* Dorsum nearly uniform red-brown with scattered faint reticulations of black. Bands are evident on the limbs. Those of thigh are broad, three on each side. Those of tibia are narrower and three on each side. Two bands are present on tarsus and foot and two on the forelimbs. The venter is a dusky brown with small lighter spots. The undersurfaces of the forelimbs and the area across the chest lack the dusky brown pigment and are yellow.

*Measurements in mm.* Snout to vent 33; width of head 10.2; length of head 9.8; horizontal length of tympanum 1.2; length of eye 3.6; eye to nostril 3.2; eyelid width 2.2; interorbital distance 2.6; length of tibia 13.0.

*Variation.* The four paratypes are quite similar in appearance. In all specimens the venter is grey-cream with cream spots on chin and throat. The legs are flecked with brown pigment giving the appearance of cream flecks. All specimens have a light triangular interorbital spot, although it is weak in the holotype. Two specimens have a dark chevron on the dorsum (MCZ 35330, 35333). None of the type-series shows the wide or narrow vertebral stripe, although this variation is seen in examples of *E. martinicensis* collected with the type-series.

This species has a narrower head than does *E. martinicensis*. The head width/body length ratio ranges from 0.27 to 0.32 with a mean of 0.30, whereas of twenty-four *E. martinicensis* taken at the type locality by Barlagne and Lazell, the ratio varies from 0.32 to 0.41 with a mean of 0.33.

*Comparisons.* While morphologically *E. barlagnei* is quite similar to *E. martinicensis*, there are several differences. *E. barlagnei* has a dark venter, the tympanum appears smaller and is farther from the mouth and the vomerine tooth bosses are triangular in outline, not elongate, and do not extend laterally beyond the inner borders of the choanae (in *E. martinicensis* the bosses extend laterally as far as the outer borders of the choanae).

*E. urichi* has less prominent vomerine tooth patches which are round. *E. johnstonei* has shorter limbs and the choanae are not completely visible when the roof of the mouth is viewed from directly below. *E. barbudensis* has elongate vomerine tooth patches.

A further difference can be noted between these frogs. In

connection with a study regarding the identity of *Hyla barbudensis* (= *Eleutherodactylus barbudensis*), I prepared skeletons of the two species found at Matouba. *E. barlagnei* is very dissimilar to *E. martinicensis* with regards to the form of the ilium. These differences are readily apparent in Figure 2. *E. barlagnei* has a thinner ilial shaft, smaller angle of ventral acetabular expansion, less elevated ilial prominence and a very short

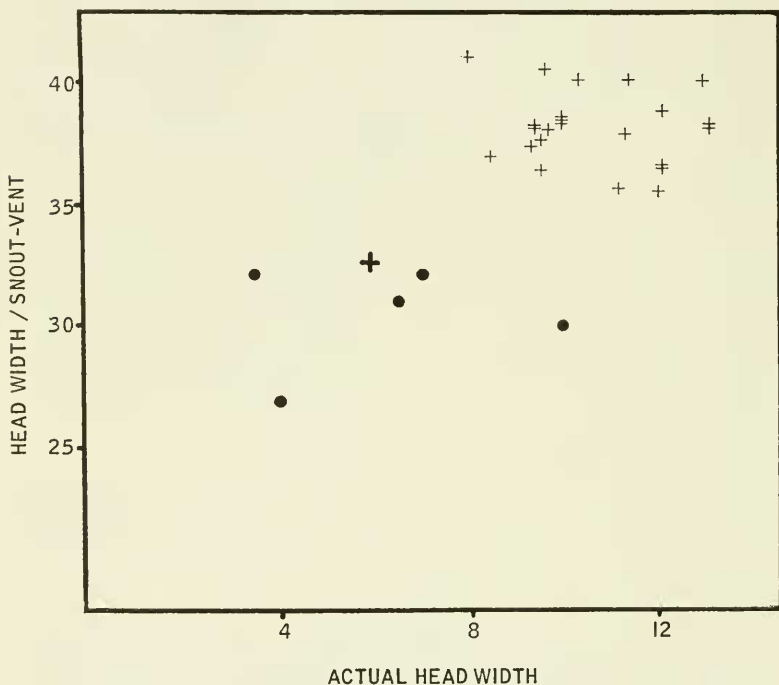


FIGURE 3. Head width in per cent of snout-vent length vs. actual head width in mm. Crosses are *E. martinicensis*, circles are *E. barlagnei* sp. nov. Large cross is a small *E. martinicensis* with a narrow head; in other features it is typical of its form.

crest beginning at the anterior edge of the ilial prominence and extending anterad about one and one-half times the length of the prominence. There is also less of a ventral acetabular expansion in *E. barlagnei*.

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## LITERATURE CITED

AUFFENBERG, W. A.

1958. A small fossil herpetofauna from Barbuda, Leeward Islands, with the description of a new species of *Hyla*. Quart. J. Florida Acad. Sci., **21**: 248-254.

COCHRAN, D. M.

1941. The herpetology of Hispaniola. Bull. U. S. Nat. Mus., **177**: vii + 1-398 pp.

LYNCH, J. D.

- In press. The status of the tree frog, *Hyla barbudensis* Auffenberg, from Barbuda, BWI. Copeia.

LYNN, W. G. AND C. GRANT

1940. The herpetology of Jamaica. Bull. Inst. Jamaica, Sci. Ser., **1**: 1-148.

SCHWARTZ, A.

1957. A new species of *Eleutherodactylus* (Amphibia: Leptodactylidae) from Cuba. Proc. Biol. Soc. Washington, **70**: 209-212.
- 1958a. Four new frogs of the genus *Eleutherodactylus* (Leptodactylidae) from Cuba. Amer. Mus. Novit. No. 1873: 1-20.
- 1958b. Another new species of *Eleutherodactylus* (Amphibia: Leptodactylidae) from Western Cuba. J. Washington Acad. Sci., April, 1958: 127-131.
- 1958c. Another new large *Eleutherodactylus* (Amphibia: Leptodactylidae) from Western Cuba. Proc. Biol. Soc. Washington, **71**: 37-42.
- 1958d. A new frog of the *auriculatus* group of the genus *Eleutherodactylus* from Western Cuba. Herpetologica, **14**: 69-77.
- 1959a. A new species of frog of the *Eleutherodactylus ricordi* group from Central Cuba. Amer. Mus. Novit., No. 1926: 1-16.
- 1959b. The status of *Eleutherodactylus pinarensis* and a new species of the genus from Western Cuba. Herpetologica, **15**(2): 61-69.
1960. Nine new Cuban frogs of the genus *Eleutherodactylus*. Reading Pub. Mus. and Art Gallery, Sci. Publs., **11**: 1-50.

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